

8



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,938	07/18/2001	Kiyoshi Nishio		4331

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EXAMINER

TYLER, CHERYL JACKSON

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 09/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,938

Applicant(s)

NISHIO ET AL.

Examiner

Cheryl J. Tyler

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(h)(3) because the section view "F-F" (Figure 12) should be designated by an Arabic or Roman numeral corresponding to the view number of the sectional view. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words, and includes the implied phrase "It is an object of the invention to" (in line 1). Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: the recitation of "Fig. 14" (page 30 , line 15) is presumed to be --Fig. 16--.

Appropriate correction is required.

4. The title of the invention is not fully descriptive of the inventive features. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: "Fluid Apparatus Having Downwardly Inclined Lower Lamella Portions of a Bellows".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1 and 4 are rejected under 35 U.S.C. 102(a) as being anticipated by Thomin et al. (WO 99/31388). Thomin et al. teach a fluid apparatus having a bellows 12 with extending and contracting portions configured by forming ridge-like folds and valley-like folds 18 in a vertically alternate and continuous manner, that are extendingly and contractingly deformable in an axial direction. The bellows are placed in a pump body 1 such that there is a vertically extending axis. Figure 2 illustrates an inner pumping chamber 11 (corresponding to the claimed liquid chamber) formed inside of bellows 12; an outer pumping chamber 10 (corresponding to the claimed air chamber) formed outside of the bellows 12; and a suction (or inflow, as in claim 4) port 43 and a discharge (or outflow, as in claim 4) port 45 formed in an inner bottom face of the pump body facing the inner pumping chamber. Figure 2 further illustrates that the bellows are formed into a shape in which a lower one of upper and lower lamella portions of each of

the ridge-like folds is downwardly inclined as moving toward the axis, in both the extending and the contracting state.

While there are instances of functional language in the claims, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here, and were not specifically addressed.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hope et al. (4,231,724). Hope et al. teach a fluid apparatus having a bellows 45 configured by a pump in which a bellows that has an extending and contracting portion configured by forming ridge-like folds and valley-like folds in a vertically alternate and continuous manner (see column 5, lines 7-13), and that is extendingly and contractingly deformable in an axial direction. The bellows 45 are placed in a main frame 12

(corresponding to the claimed pump body) in a vertical manner, and include a chamber inside of the bellows. Hope et al. further teach a suction port 83 and a discharge port 63 and that the extending and contracting portion of the bellows is formed into a shape in which a lower one of upper and lower lamella portions of each of the ridge-like folds is downward inclined as moving towards the axis, not only in an extending state but also in a contracting state. With regards to claim 4, since the bellows are exposed to air, it stands to reason that there is an air chamber outside of the bellows. That is, outside of the bellows 4 and within main frame 12, constitutes the claimed air chamber.

While Hope et al. teach most of the limitations of the claims, they do not explicitly teach that the ports are in an inner bottom face of the pump body facing the liquid chamber. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the ports in an inner bottom face of the pump body in order to advantageously reduce the number of elements in the fluid apparatus. By reducing the number of elements, the cost of the apparatus and the manufacturing times may be reduced. Further, it would reduce the overall height and weight of the apparatus by incorporating the ports in the pump body.

While there are instances of functional language in the claims, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here, and were not specifically addressed.

9. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hope et al. (mentioned previously) in view of Eickmann (4,984,970). Hope et al. teaches most of the limitations of the claims, except the inclination angle of the lower lamella portion of the bellows. Eickmann teaches the criticality of choosing the correct angle in order to enable the bellowed portions to withstand higher pressures without failing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the cited dimensions, without undue experimentation, in order to withstand the maximum amount of pressure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the cited dimensions, as discussed by Eickmann, in the Hope et al. invention in order to advantageously achieve the maximum amount of pressure in the bellows without the bellows failing.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

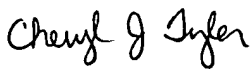
- Thomin et al. (6,345,963) is an English translation of the cited PCT document used in the 102(a) rejection.
- Smith (2,021,156) teaches a pump having a lower lamella portion of the bellows that is downwardly inclined in both the extending and contracting state.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl J. Tyler whose telephone number is 703-306-2772. The examiner can normally be reached on Monday-Thursday, 6:00 - 10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 703-308-0102. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.


Cheryl J. Tyler
Primary Examiner
Art Unit 3746

CJT
September 21, 2002